

REMARKS

The Applicants respectfully request entry of the Amendment and the reconsideration of the claims. Claims 78, 82, 83, 85, and 86 have been amended. Claim 87 has been canceled. Claims 90-106 have been added. No new matter has been added through the amendments. Claims 78-86 and 89-106 are pending. The Applicants respectfully request reconsideration and withdrawal of the pending rejections under 35 U.S.C. §112, first and second paragraph, and the nonstatutory double patenting rejection.

New Claims

Newly added independent claim 90 recites a method of producing a CICM cell line, comprising the same steps recited in independent claim 78 with the additional limitation in step (iv) of culturing the CICM cell line on a feeder layer to maintain said CICM cell line in an undifferentiated state. Newly added independent claim 99 recites a method of producing a CICM cell line comprising the same steps recited in independent claim 78 with the additional limitation in step (iv) of culturing the CICM cell line in the presence of cytokines to maintain said CICM cell line in an undifferentiated state. Support for these claims can be found throughout the specification.

Claim Objections

The Examiner objects to claims 78 and 85 due to misspellings. The claims have been amended to correct these typographical errors. The Applicants respectfully request withdrawal of the objections.

Double Patenting Rejection

The Examiner rejects claims 78-89 for obviousness-type double patenting over claims 1-18 of U.S. Patent No. 6,235,970 B1. The Applicants enclose herewith a Terminal Disclaimer with this Amendment to obviate the double patenting rejection. The Applicants respectfully request withdrawal of the rejection.

Rejections under 35 U.S.C. §112, first paragraph

Feeder Layer. The Examiner rejects claims 78-89 for enablement. The Examiner asserts the specification does not provide enablement for conditions, other than a fibroblast feeder layer, to maintain a CICM cell line in an undifferentiated state. Furthermore, the Examiner cites Thomson *et al.*, which reported that inner cell mass derived cells differentiated and died in the absence of a fibroblast feeder layer. The Applicants respectfully traverse.

The specification exemplifies the embodiments of the claims with the use of a fibroblast feeder layer. For example, the specification at page 5, lines 10-12 recites

...embryonic stem cell lines and other embryonic cell lines must be maintained in an undifferentiated state that requires feeder layers and/or the addition of cytokines to media.

Thus, the specification contemplates the propagation of the cells without a feeder layer. An ICM cell culture system allowing proliferation without differentiation was well known in the art at the time of the invention. ICM cells were demonstrated to survive in culture without a feeder layer and without differentiation in Sims & First (*Proc. Natl. Acad. Sci. USA*, 1993, 90:6143-6147; cited by the Examiner in the Office Action dated November 19, 2002).

"CR1aa plus SIT plus 5% FCS allowed mitosis and continued proliferation of ICM cells for 4 weeks." p. 6144, column 2, 2nd full paragraph.

Another cell line was maintained for 101 days without a fibroblast feeder layer. (*Id.* at p. 6145, column 2, 1st full paragraph). Additionally, the Thomson reference also identifies a factor from "a human yolk sac carcinoma cell line (GCT 44) [that] supports the growth of feeder-dependent human EC cells in the absence of fibroblasts, but the factor has not yet been purified." It was well known in the art at the time of filing that inner cell mass cells could be cultured without a feeder layer and without differentiating. Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §112, first paragraph.

Somatic Cell Nucleus. The Examiner rejects claim 78 asserting that “cell nucleus” encompasses germ cells previously discussed in the response dated August 6, 2003, the assignee has demonstrated in another pending application that CICM cell lines may be derived from pathenogenically activated germ cells and give rise to different differentiated cell types. Claim 78 has been amended to recite “mammalian somatic cell nucleus” to expedite prosecution.

Neural Cells/Hematopoietic Cells. The Examiner rejects claim 86 asserting that the specification does not "provide[s] teachings, guidance, or evidence with regard to the differentiation of hematopoietic cells into neural cells." Claim 86, in addition to claim 85, has been amended to correct dependency. Support for this amendment can be found throughout the specification, including at page 20, line 30 to page 21, line 11.

In view of the foregoing, the Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §112, first paragraph.

Rejections under 35 U.S.C. §112, second paragraph

State/Stage. The Examiner rejects claim 78 for being unclear asserting it is unclear whether the claim refers to a developmental state or stage. Claim 78 has been amended to correct this obvious typographical error. Support for the amendment can be found throughout the specification, including at page 7, line 30; page 8, line 17; page 10, line 31; and page 11, line 19.

Hematopoietic cells. The Examiner rejects claim 85 for being unclear asserting the method of claim 85 is contrary to the method steps of claim 78, which claim 85 depends upon. Claim 85 has been amended to clearly recite how the hematopoietic cells are obtained. Support for this amendment can be found throughout the specification, including at page 20, lines 24-29.

Neural cells. The Examiner rejects claim 86 for being unclear asserting the method of claim 86 is contrary to the method steps of claim 78, which claim 86 depends upon. Claim 86 has

been amended to clearly recite how the neural cells are obtained. Support for this amendment can be found throughout the specification, including at page 20, line 30 to page 21, line 11.

In view of the foregoing, the Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §112, second paragraph.

CONCLUSION

In view of the foregoing, the Applicants believe that all claims as currently pending are in condition for allowance and such action is respectfully requested. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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